Council on Postsecondary Education
November 5, 2001

Eisenhower Higher Education Grant Program

Action: The staff recommends that the council approve awarding federal Dwight D. Eisenhower Higher Education funds in the amount of $954,412 for October 1, 2001-September 30, 2003, to support the 16 projects listed on the attachment beginning on page 113.

The Dwight D. Eisenhower Higher Education Grant Program supports activities in schools to improve teaching in mathematics, the sciences, and other areas. This year the council was required to allocate at least 56.82 percent toward projects in mathematics and science, but it was permitted to use the remainder to fund projects in other areas. Proposals supporting implementation of the
P-16 Council's math and literacy alignment teams' recommendations were encouraged.

The council staff visited with the program directors of all Eisenhower projects funded last November. They found the projects offer substantive, professional development experiences for P-12 mathematics and science teachers. The workshops presented practical applications for mathematical and scientific concepts, and computer resources for lesson plans. They made clear connections to the Kentucky core content and national curriculum standards. Many of them provided field experiences that teachers could easily use in their classes or student clubs.

This fall, for the first time, the council staff brought together project leaders from the 1999 and 2000 award years to share best practices from their Eisenhower experiences. Based on these evaluations of previous projects, this year's request for proposals called for greater engagement of school principals and district leaders and follow-up activities in classrooms to reinforce the lessons learned during the summer workshops.

A statewide team, including postsecondary faculty, P-12 teachers, and representatives from the Kentucky Department of Education and the Council on Postsecondary Education, reviewed 23 proposals. Sixteen projects are recommended for funding, including two statewide projects. One is for middle school mathematics teachers, in cooperation with the Kentucky Department of Education's teacher academy program. The other, modeled on the Collaborative Center for Literacy Development's Kentucky Early Reading Project, improves reading instruction for all middle and secondary teachers. Attached is a brief description of each project.

Staff preparation by Dianne M. Bazell

Eisenhower Mathematics and Science Education Grant Program Projects Recommended for Approval for Federal Fiscal Year 2002

Mathematics and Science Projects:

Campbellsville University: $50,189
Outdoor Classroom Institute
James Pirkle

The School of Education and the Science Division at Campbellsville University will select up to 30 elementary and middle school teachers from seven central Kentucky school districts to teach vocabulary development and reading comprehension in science, grades four through six. The project will offer a five-day summer workshop at the university's Clay Hill Memorial Forest (outdoor classroom) and follow-up sessions during the academic year and the following summer. Field-tested lesson plans will be provided on the university Web site for non-participating teachers to use in outdoor classroom settings.

Kentucky Community and Technical College System: $52,855
Geometry for All
Kim Zeidler

This project will target middle school teachers, grades five through eight, in 17 Appalachian school districts, including special education teachers responsible either for teaching mathematics or for assisting mathematics teachers. The project, which focuses on geometry and measurement, also provides on-site team teaching through the Appalachian Rural Systemic Initiative and on-line listserv support.

Morehead State University: $57,864
Life in the Universe
Eric Thomas, Benjamin Malphrus, and Brian Reeder

This project will provide a summer workshop, academic year seminar series, field and laboratory experiences, and an instructional support program to improve the teaching in life, earth, and space sciences for grades eight through twelve. The project will be led by faculty at MoSU's Space Science Center, the Department of Biological and Environmental Sciences, and the Department of Physical Sciences, as well as staff of the Department of Education and regional service centers six, seven, and eight.

Murray State University: $58,428
Patterns, Systems, Core Content
Joseph Baust

Murray State University's Center for Environmental Education and Western Kentucky University's Center for Math, Science, and Environmental Education will offer a week-long residential summer workshop with two follow-up sessions during the academic year at Land Between the Lakes. The project will help up to 30 teachers use environmental studies to connect mathematics and science concepts across the curriculum.

Northern Kentucky University: $57,098
Reading the River
Yvonne Meichtry

The project's title is taken from conservationist Aldo Leopald's concept of "reading the landscape" to discover and understand the natural and human forces that shape the environment. Twenty science teachers, grades five through twelve, will conduct interdisciplinary studies on a six-day journey from the headwaters to the mouth of the Licking River. Content area specialists from 13 partnering agencies will show teachers how to connect the study of water quality to natural history, land use, and culture. The project will address all major areas of the elementary and secondary curriculum.

Northern Kentucky University: $59,997
Coordinating Number and Computation Concepts across
Grades Four through Nine
Linda Jensen Sheffield and Maggie McGatha

Project directors will improve teachers' use of technology (including computers, the Internet, calculators, and physical models) and help them better teach the Kentucky number and computation core content standards. They will conduct two 35-hour seminars and 15-hour follow-up sessions for 40 teachers and administrators from up to 25 school districts in northern Kentucky. This project is the final phase of a four-year cycle that included geometry and measurement (1998-99), algebra (1999-2000), and probability and statistics (2000-01).

Pikeville College: $46,621
Geometry for All
Mary Koshar

The project will target high school teachers, grades nine through twelve, in 17 Appalachian school districts, including special education teachers responsible either for teaching mathematics or for assisting mathematics teachers. The project, which focuses on geometry and measurement, provides on-site team teaching through the Appalachian Rural Systemic Initiative and on-line listserv support. It extends the similar KCTCS middle school project to high school teachers.

University of Kentucky: $17,065
Keeping the Hands-On in Virtual Learning
Joseph P. Straley

This proposal supplements a three-year grant awarded to the Department of Physics and Astronomy by the U.S. Department of Education Fund for Improvement of Postsecondary Education to develop and pilot a "high tech-high touch" approach to the professional development of science teachers, grades four through eight, in rural schools. Teachers receive all their training at their own sites on their own schedules under the remote guidance of UK instructors and specially developed software. Eisenhower funds will be used to provide classroom materials, graduate tuition for participants, and release time for teachers to improve their understanding of physics.

University of Louisville: $145,500
Kentucky Middle School Mathematics Academies - Year 3
William Bush

The project will continue into a third year eight five-day mathematics academies across the state, with follow-up sessions during the school year. Activities will build the content knowledge of 240 middle school mathematics teachers, improve their instructional abilities, and raise student achievement as measured by classroom, district, and state assessments.

Western Kentucky University: $22,160
Teaching and Learning Astronomy and Space Science
Roger Scott

Targeting middle and high school science teachers, but welcoming elementary teachers as well, this project will offer a five-day workshop and two academic year follow-up sessions. Teachers will participate in laboratory and discussion sessions and planetarium activities and develop portfolios for long-term projects for students. They will be certified to receive NASA moon rocks and meteorites for classroom use. Participants may receive three semester hours of graduate work.

Western Kentucky University: $55,148
Gender Related Engineering Activities to Teach Science (GREAT Science)
Kathleen Matthew and Stacy Wilson

This project will include a week-long summer workshop and two follow-up sessions for elementary and middle school teachers and counselors, a LEGO robot extravaganza to promote critical and creative thinking, and an engineering career day for teachers and their students. Participants and their students will benefit from mentoring activities with women in executive positions in science and engineering careers. Teachers will be asked to make presentations to peers about science, engineering, and the role of women in these professions.

Western Kentucky University: $58,476
Raising Achievement in Middle School Science
Julia Roberts

University faculty and veteran Eisenhower participants will work with 54 middle school science teachers. Participants will engage in astronomy observation and learn about computer space simulation, telescope construction, spectroscopic analysis of light, and model rocketry. They will develop science-teaching units meeting national science standards and Kentucky core content standards.

Western Kentucky University: $57,828
The River: A Resource for Improving Math and Science Content
Terry Wilson, Alice K. Mikovch, Wanda Weideman

This project, successfully implemented in the Campbellsville and Mammoth Cave area, will be extended to 12 districts in the Owensboro area. An estimated 24 middle school mathematics and science teachers will use scientific experiments–some conducted on the Green River–to evaluate

the physical, biological, and chemical quality of water systems. Using technology and mathematical concepts to make predictions and to analyze data, they will plan lessons that integrate mathematics, science, technology, and real world applications.

Literacy Projects:

Morehead State University: $39,900
Content Area Reading Workshop
Mary Anne Pollock

Morehead State University's departments of elementary reading, special education, physical sciences, mathematical sciences, geography, government, and history will collaborate to provide a reading workshop, followed by classroom visits for 30 teachers and their principals from 18 district schools. Participants will create programs adapted to materials in math, geography, government, and other content areas, providing reading instruction to 2,400 students.

University of Kentucky: $145,500
Enhancing Student Learning in Mathematics and Science through Literature-based Reading Instruction
Sara Delaney Moore and William P. Bintz

The University of Kentucky and the Appalachian Rural Systemic Initiative, with the support of the regional service centers in eastern Kentucky, will provide summer workshops and follow-up sessions to 75 mathematics and science teachers, grades four through eight. The program will use literature to improve teaching, enhance student learning, and increase interdisciplinary understanding of mathematics and science concepts. The project also will provide support to administrators and library and media specialists in the 35 ARSI counties.

Union College: $29,783
Learning Science through Literature and Technology
Robert Swanson

This project will offer to 25 local science teachers a summer workshop with follow-up classroom visits and support participation in activities offered by the Kentucky Science Teachers' Association and the Mountain Science Teachers' Association. Through hands-on science activities, use of technology, analysis of children's books, and production of a science-oriented children's CD, teachers will increase their science knowledge and teaching skills and learn to integrate science and language arts activities.